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UPA-01106

REMARKS

In the Office Action, claims 1-4, 6, 7, 10-15 and 18 are rejected under 35 U.S.C. §102(e) as being anticipated by Wass, claims 5, 8 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wass in view of Asakura et al, claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over Wass in view of Yanagisawa et al., and claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over Wass in view of Hayes.

Claim 11 is now cancelled. The base claim 1 is amended to clearly define the invention in a patentable way to overcome the rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a). Specifically, the amended claim 1 now includes the limitation that said feed radiating element is disposed on a plane neither containing nor in parallel with said first and second radiating elements, and said feed radiating element forms an angle in a range between 70° to 180° with a surface containing said first or second radiating element. None of the cited prior arts or their combination has taught, suggested or anticipated a feed radiating element neither containing nor in parallel with first and second radiating elements. The feed radiating element disclosed in the cited prior arts is either on the same surface or in parallel with the first and second radiating elements without forming an angle. Therefore, a person having ordinary skill in the art can not reach the subject matter of the invention even if all the cited prior arts are combined.

The gist of this invention is to provide a multi-frequency band antenna that has a small size and can be hidden and manufactured within a wireless communication device.



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As shown in FIGs. 3-6, the feed radiating element is formed in a plane neither containing nor in parallel with the first and second radiating elements. The angle θ between the feed radiating metal wire 512 and the plane containing the metal wires 412 and 414 can be a right angle, an acute angle or an obtuse angle to avoid having a protrusive portion (page 8, lines 9-12). This arrangement makes it possible to reduce the size of the multi-frequency band antenna.

Wass teaches a meander antenna device in which the feed radiating element is located on the same plane or surface of the first and second radiating elements. As can be seen in the disclosure, the antenna is not meant to be hidden within the communication device.

Asakura et al. teach a chip antenna having multiple resonance frequencies. The feed radiating element 27 is formed on a plane in parallel with other radiating elements as can be seen from FIGs. 4, 5 and 7 in Asakura's drawings.

Yanagisawa et al. teach a folded antenna. The feed radiating elements 20a, 30a, 40a and 50a shown in FIGs. 1-5 of Yanagisawa's drawings all are in the same surface or plane forming the other radiating elements.

Hayes teaches a multiple band printed monopole antenna in which the feed port element from 22 to 32 is also in a plane in parallel with the plane of other radiating elements as shown in FIG. 1 of Hayes' drawings.

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From the foregoing discussion, it is clear that the instant invention differs from the cited prior arts. The physical difference results in different effects and is not obvious. The amended base claim 1 has overcome all the rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) and should be patentable. By virtue of dependency, claims 2-10 and 12-18 should also be patentable.

FIGs. 7d-7g has been added to show every feature of the invention. They are submitted for approval. Formal drawings will be submitted after the application is allowed. Prompt and favorable reconsideration of the application is respectfully solicited.

Respectfully submitted,



Jason Z. Lin
Agent for Applicants
Reg. No. 37,492
19597 Via Monte Drive
Saratoga, CA 95070
(408) 867-9757

